AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): A method of preparing a cement matrix or hydraulic binder comprising:

preparing an aqueous dispersion comprising a mineral filler and a dispersing agent, and

adding the aqueous dispersion to a cement or hydraulic binder,

wherein the dispersing agent comprises a copolymer prepared by the radical copolymerization of at least one alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol ethylenic urethane monomer with at least one anionic monomer; ~~and~~ at least one non-ionic monomer; and at least one alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol acrylate or methacrylate or an alkyloxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol allyl ether.

Claim 2 (Original): The method according to Claim 1, wherein the urethane monomer is an alkoxy-polyethylene glycol urethane.

Claim 3 (Canceled)

Claim 4 (Original): The method according to Claim 1, wherein the copolymer further comprises ethylenic monomers having at least two polymerizable double bonds.

Claim 5 (Currently Amended): The method according to Claim 1, wherein the dispersing agent is a copolymer comprising:

a) 1% to 50% by weight of one or more anionic monomers;

b) 2% to 65% by weight of one or more non-ionic monomers;

c) 3% to 65% by weight of an alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol ethylenic urethane monomer;

d) 0% to 90% by weight of an alkyloxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol acrylate or methacrylate, or an alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol allyl ether;

e) 0% to 5% by weight of one or more cross-linking agents; and

the total of monomers a), b), c), d) and e) is equal to 100%.

Claim 6 (Original): The method according to Claim 1, wherein the anionic monomer is at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, 2-acrylamido-2-methyl-l-propane sulphonic acid, 2-methacrylamido-2-methyl-1-propane sulphonic acid, 3-methacrylamido-2-hydroxy-l-propane sulphonic acid, allylsulphonic acid, methallylsulphonic acid, allyloxybenzene sulphonic acid, methallyloxybenzene sulphonic acid, 2-hydroxy-3-(2-propenyloxy)propane sulphonic acid, 2-methyl-2-propene-1-sulphonic acid, ethylene sulphonic acid, propene sulphonic acid, 2-methyl propene sulphonic acid, styrene sulphonic acid, vinyl sulphonic acid, sodium methallylsulphonate, sulphoethyl or sulphopropyl acrylate or methacrylate, sulphomethylacrylamide, sulphomethylmethacrylamide, ethylene glycol methacrylate phosphate, and ethylene glycol acrylate phosphate.

Claim 7 (Original): The method according to Claim 1, wherein the non-ionic monomer is at least one monomer selected from the group consisting of acrylamide or methacrylamide or derivatives thereof, C_1 to C_{40} acrylic or methacrylic acid alkyl-esters, alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-acrylates or oxyalkyl, oxyaryl, oxyalkylaryl or oxyarylalkyl methacrylates (wherein the alkylene, arylene, alkylarylene or arylalkylene oxide number is between 1 and 120), vinyl acetate, vinylpyrrolidone, styrene or α-methylstyrene, and ethyl acrylamide or acrylate.

Claim 8 (Currently Amended): The method according to Claim 1, wherein the alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol urethane monomer is at least one monomer selected from the group consisting of reaction products of alkoxy-polyalkylene glycol with a ~~polymerisable~~ polymerizable unsaturated isocyanate, and the reaction products of methoxy-polyethylene glycol with an acrylic, methacrylic, vinyl or allyl isocyanate.

Claim 9 (Currently Amended): The method according to ~~Claim 3~~ Claim 1, wherein the alkyloxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol acrylate or methacrylate is a methoxy-polyethylene glycol acrylate or methacrylate, and the polyethylene glycol has a molecular weight greater than 300.

Claim 10 (Currently Amended): The method according to Claim 1, wherein the copolymer further comprises ethylenic monomers having at least two polymerizable double bonds ~~are~~ selected from the group consisting of ethylene glycol dimethyacrylate, divinylacetylene, divinylbenzene, trimethylolpropanetriacrylate, allyl acrylate, methylene-bis-acrylamide, methylene-bis-methacrylamide, tetrallyloxyethane, triallylcyanurates, and allyl ethers prepared from polyols.

Claim 11 (Original): The method according to Claim 10, wherein the polyols are selected from the group consisting of pentaerythritol, sorbitol, and sucrose.

Claim 12 (Original): The method according to Claim 1, wherein the dispersing agent is fractionated subsequently to the polymerization step.

Claim 13 (Original): The method according to Claim 1, wherein the dispersing agent is completely in the form of an acid.

Claim 14 (Original): The method according to Claim 1, wherein the dispersing agent is partially or completely neutralized by one or more neutralization agents having a monovalent function or a polyvalent function.

Claim 15 (Original): The method according to Claim 14, wherein the neutralization agents having a monovalent function are selected from the group consisting of compounds containing alkaline cations and primary or secondary aliphatic and/or cyclic amines.

Claim 16 (Original): The method according to Claim 15, wherein the alkaline cations are selected from the group consisting of sodium, potassium, lithium, and ammonium.

Claim 17 (Original): The method according to Claim 15, wherein the primary or secondary aliphatic and/or cyclic amines are selected from the group consisting of ethanolamines, mono- and diethylamine, and cyclohexylamine.

Claim 18 (Original): The method according to Claim 14, wherein the neutralization agents having a polyvalent function are selected from the group consisting of compounds containing alkaline-earth divalent cations, compounds containing trivalent cations, and compounds containing cations with a higher valency.

Claim 19 (Original): The method according to Claim 18, wherein the alkaline-earth divalent cations are selected from the group consisting of magnesium, calcium, and zinc, and the trivalent cation is aluminum.

Claim 20 (Original): The method according to Claim 1, wherein the mineral filler is selected from the group consisting of natural calcium carbonate, precipitated calcium carbonate, barium carbonate, limy rocks, dolomite, talc, ground silica, silicas in general, fumed silica, fumed titanium dioxide, diatomites, iron oxides, manganese oxides, titanium dioxide, lime, kaolin, metakaolin, clays, mica, plasters, fly ash, slag, calcium sulphate, zeolites, basalt, barium sulphate, aluminum trihydroxide, and mixtures thereof.

Claim 21 (Original): The method according to Claim 20, wherein the natural calcium carbonate is selected from the group consisting of chalk, calcite, and marble.

Claim 22 (Currently Amended): A cement matrix or hydraulic binder, prepared by mixing a cement or hydraulic binder with an aqueous dispersion comprising a mineral filler and a dispersing agent selected from the group consisting of copolymers prepared by the radical copolymerization of at least one alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol ethylenic urethane monomer with at least one anionic monomer; ~~and~~ at least one non-ionic monomer; and at least one alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol acrylate or methacrylate or an alkyloxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol allyl ether.

Claim 23 (Original): The cement matrix or hydraulic binder according to Claim 22, wherein the urethane monomer is an alkoxy-polyethylene glycol urethane.

Claim 24 (Canceled)

Claim 25 (Original): The cement matrix or hydraulic binder according to Claim 22, wherein the copolymer further comprises ethylenic monomers having at least two polymerizable double bonds.

Claim 26 (Currently Amended): The cement matrix or hydraulic binder according to Claim 22, wherein the dispersing agent is a copolymer comprising:

a) 1% to 50% by weight of one or more anionic monomers;

b) 2% to 65% by weight of one or more non-ionic monomers;

c) 3% to 65% by weight of an alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol ethylenic urethane monomer;

d) 0% to 90% by weight of an alkyloxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol acrylate or methacrylate, or an alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol allyl ether;

e) 0% to 5% by weight of one or more cross-linking agents; and

the total of monomers a), b), c), d) and e) is equal to 100%.

Claim 27 (Original): The cement matrix or hydraulic binder according to Claim 22, wherein the anionic monomer is at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, 2-acrylamido-2-methyl-1-propane sulphonic acid, 2-methacrylamido-2-methyl-l-propane sulphonic acid, 3-methacrylamido-2-hydroxy-1-propane sulphonic acid, allylsulphonic acid, methallylsulphonic acid, allyloxybenzene sulphonic acid, methallyloxybenzene sulphonic acid, 2-hydroxy-3-(2-propenyloxy)propane sulphonic acid, 2-methyl-2-propene-l-sulphonic acid, ethylene sulphonic acid, propene sulphonic acid, 2-methyl propene sulphonic acid, styrene sulphonic acid, vinyl sulphonic acid, sodium methallylsulphonate, sulphoethyl or sulphopropyl acrylate or methacrylate, sulphomethylacrylamide, sulphomethylmethacrylamide, ethylene glycol methacrylate phosphate, and ethylene glycol acrylate phosphate.

Claim 28 (Original): The cement matrix or hydraulic binder according to Claim 22, wherein the non-ionic monomer is at least one monomer selected from the group consisting of acrylamide or methacrylamide or derivatives thereof, C_1 to C_{40} acrylic or methacrylic acid alkyl-esters, alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-acrylates or oxyalkyl, oxyaryl, oxyalkylaryl or oxyarylalkyl methacrylates (wherein the alkylene, arylene, alkylarylene or arylalkylene oxide number is between 1 and 120), vinyl acetate, vinylpyrrolidone, styrene or a-methylstyrene, and ethyl acrylamide or acrylate.

Claim 29 (Currently Amended): The cement matrix or hydraulic binder according to Claim 22, wherein the alkoxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol urethane monomer is at least one monomer selected from the group consisting of reaction products of alkoxy-polyalkylene glycol with a ~~polymerisable~~ polymerizable unsaturated isocyanate, and the reaction products of methoxy-polyethylene glycol with an acrylic, methacrylic, vinyl or allyl isocyanate.

Claim 30 (Original): The cement matrix or hydraulic binder according to Claim 22, wherein the alkyloxy-, aryloxy-, alkylaryloxy- or arylalkyloxy-polyalkylene glycol acrylate or methacrylate is a methoxy-polyethylene glycol acrylate or methacrylate, and the polyethylene glycol has a molecular weight greater than 300.

Claim 31 (Currently Amended): The cement matrix or hydraulic binder according to Claim 22, wherein the copolymers further comprise ethylenic monomers having at least two polymerizable double bonds ~~are~~ selected from the group consisting of ethylene glycol dimethyacrylate, divinylacetylene, divinylbenzene, trimethylolpropanetriacrylate, allyl acrylate, methylene-bis-acrylamide, methylene-bis-methacrylamide, tetrallyloxyethane, triallylcyanurates, and allyl ethers prepared from polyols.

Claim 32 (Original): The cement matrix or hydraulic binder according to Claim 31, wherein the polyols are selected from the group consisting of pentaerythritol, sorbitol, and sucrose.

Claim 33 (Original): The cement matrix or hydraulic binder according to Claim 22, wherein the dispersing agent is completely in the form of an acid.

Claim 34 (Original): The cement matrix or hydraulic binder according to Claim 22, wherein the dispersing agent is partially or completely neutralized by one or more neutralization agents having a monovalent function or a polyvalent function.

Claim 35 (Original): The cement matrix or hydraulic binder according to Claim 34, wherein the neutralization agents having a monovalent function are selected from the group consisting of compounds containing alkaline cations and primary or secondary aliphatic and/or cyclic amines.

Claim 36 (Original): The cement matrix or hydraulic binder according to Claim 35, wherein the alkaline cations are selected from the group consisting of sodium, potassium, lithium, and ammonium.

Claim 37 (Original): The cement matrix or hydraulic binder according to Claim 35, wherein the primary or secondary aliphatic and/or cyclic amines are selected from the group consisting of ethanolamines, mono- and diethylamine, and cyclohexylamine.

Claim 38 (Original): The cement matrix or hydraulic binder according to Claim 34, wherein the neutralization agents having a polyvalent function are selected from the group consisting of compounds containing alkaline-earth divalent cations, compounds containing trivalent cations, and compounds containing cations with a higher valency.

Claim 39 (Original): The cement matrix or hydraulic binder according to Claim 38, wherein the alkaline-earth divalent cations are selected from the group consisting of magnesium, calcium, and zinc, and the trivalent cation is aluminum.

Claim 40 (Original): The cement matrix or hydraulic binder according to Claim 22, wherein the mineral filler is selected from the group consisting of natural calcium carbonate, precipitated calcium carbonate, barium carbonate, limy rocks, dolomite, talc, ground silica, silicas in general, fumed silica, fumed titanium dioxide, diatomites, iron oxides, manganese oxides, titanium dioxide, lime, kaolin, metakaolin, clays, mica, plasters, fly ash, slag, calcium sulphate, zeolites, basalt, barium sulphate, aluminium trihydroxide, and mixtures thereof.

Claim 41 (Original): The cement matrix or hydraulic binder according to Claim 40, wherein the natural calcium carbonate is selected from the group consisting of chalk, calcite, and marble.

Claim 42 (Original): A concrete prepared by the method of Claim 1.

Claim 43 (Original): A mortar prepared by the method of Claim 1.

Claim 44 (Original): A hydraulic concrete prepared by the method of Claim 1.

Claim 45 (Original): A grout prepared by the method of Claim 1.

Claim 46 (Original): A composition based on cement and/or calcium sulphate hemihydrate prepared by the method of Claim 1.

Claim 47 (Original): A concrete comprising the cement matrix or hydraulic binder of Claim 22.

Claim 48 (Original): A mortar comprising the cement matrix or hydraulic binder of Claim 22.

Claim 49 (Original): A hydraulic concrete comprising the cement matrix or hydraulic binder of Claim 22.

Claim 50 (Original): A grout comprising the cement matrix or hydraulic binder of Claim 22.

Claim 51 (Original): A composition based on cement and/or calcium sulphate hemihydrate comprising the cement matrix or hydraulic binder of Claim 22.

Claim 52 (Original): A building comprising the cement matrix or hydraulic binder of Claim 22.

Claim 53 (Original): A bridge comprising the cement matrix or hydraulic binder of Claim 22.

Claim 54 (Original): A road comprising the cement matrix or hydraulic binder of Claim 22.

Claim 55 (Original): An offshore construction comprising the cement matrix or hydraulic binder of Claim 22.

Claim 56 (Original): A petroleum cement comprising the cement matrix or hydraulic binder of Claim 22.